

## AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently amended) A computer-implemented method employed within a network of application server instances having a cluster architecture comprising:  
displaying a hierarchical tree structure having one or more tree nodes in a graphical user interface, each of the one or more tree nodes representing a resource of an application server instance within a cluster of application server instances, each application server instance within the cluster of application server instances having  
a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central database associated with the cluster of application server instances, and  
a dispatcher in communication with a central service associated with the cluster of application server instances, the central service enabling synchronization and communication between each of the application server instances within the cluster of application server instances, the central service having a locking service and a messaging service, the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored with the central database, the messaging service enabling communication among the groups of server nodes within

each application server instance within the cluster of application server instances using a message passing protocol,

wherein at least one of the ~~resources~~ the tree nodes ~~represents~~ represent is a service of the application server instance within the cluster of application server instances;

receiving an input selecting the tree node representing the service of the application server instance within the cluster of application server instances;

displaying a list of one or more service references associated with the service represented by the selected tree node in the graphical user interface; and

displaying a relationship value for each listed service reference, wherein the relationship value is to specify a binary value that represents a strength of a relationship between the listed service reference and the service represented by the selected tree node, the strength of the relationship indicating whether the listed service reference is or is not automatically started when the service represented by the selected tree node is started.

2. (Original) The method of claim 1, wherein displaying the hierarchical tree structure having one or more tree nodes in the graphical user interface comprises:

displaying the hierarchical tree structure in a first window pane of the graphical user interface; and

wherein displaying the list of one or more service references associated with the selected tree node in the graphical user interface comprises:

displaying the list of one or more service references associated with the service represented by the selected tree node in a second window pane of the graphical user interface.

3. (Original) The method of claim 2, wherein displaying the list of one or more service references associated with the selected tree node comprises:

displaying a service reference name, for each listed service reference,  
wherein the service reference name is to identify the service  
reference.

4. (Cancelled)

5. (Currently amended) The method of claim 1, wherein the displayed relationship value is the binary value that indicates that the strength of the relationship between the listed service reference and the service represented by the selected tree node is hard if the listed service reference is to be automatically started when the service represented by the selected tree node is started.

6. (Currently amended) The method of claim 1, wherein the displayed relationship value is the binary value that ~~indicates~~ represents that the strength of the relationship between the listed service reference and the service represented by the selected tree node is weak if the listed service reference is not automatically started when the service represented by the selected tree node is started.

7. (Previously presented) The method of claim 1, wherein displaying the list of one or more service references associated with the selected tree node further comprises:

displaying a service reference type for each listed service reference, wherein the service reference type is to specify a service reference type for the listed service reference.

8. (Original) The method of claim 7, wherein the displayed service reference type is one of
- a service type,
  - a library type, and
  - an interface type.
9. (Currently amended) The method of claim 1, further comprising:
- receiving an input selecting one of the listed service references; and
  - receiving an additional input setting the relationship value for the selected service reference, the ~~relationship value~~ additional input to specify the binary value that represents the strength of the relationship between the selected service reference and the service represented by the selected tree node, the strength of the relationship indicating whether the selected service reference is to be automatically started when the service represented by the selected tree node is started.
10. (Currently amended) An apparatus comprising:
- a graphical user interface; and
  - a processor and logic executable thereon to
    - display a hierarchical tree structure having one or more tree nodes in the graphical user interface, each of the one or more tree nodes representing a resource of an application server instance within a cluster of application server instances, each application server instance within the cluster of application server instances having
      - a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central

database associated with the cluster of application server instances, and

a dispatcher in communication with a central service associated with the cluster of application server instances, the central service enabling synchronization and communication between each of the application server instances within the cluster of application server instances, the central service having a locking service and a messaging service, [[,]] the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored with the central database, the messaging service enabling communication among the groups of server nodes within each application server instance within the cluster of application server instances using a message passing protocol,

wherein at least one of the resources the tree nodes represents represent is a service of the application server instance within the cluster of application server instances;

receive an input to select the tree node representing the service of the application server;

display a list of one or more service references associated with the service represented by the selected tree node in the graphical user interface; and

display a relationship value for each listed service reference, wherein the relationship value is to specify a binary value that represents a strength of a relationship between the listed service reference and the service represented by the selected tree node, the strength of the relationship indicating whether the listed

service reference is or is not automatically started when the service represented by the selected tree node is started.

11. (Original) The apparatus of claim 10, wherein the graphical user interface comprises:

a Swing-based graphical user interface.

12. (Original) The apparatus of claim 10, wherein each of the one or more tree nodes comprises:

a managed bean to provide a management interface for the represented application server resource.

13. (Original) The apparatus of claim 10, wherein the processor and logic executable thereon to display the list of one or more service references associated with the service comprises a processor and logic executable thereon to

display a service reference name, for each listed service reference, wherein the service reference name is to identify the service reference.

14. (Cancelled)

15. (Currently amended) The apparatus of claim 10, wherein the displayed relationship value is the binary value that represents ~~indicates~~ that the strength of the relationship between the listed service reference and the service represented by the selected tree node is hard if the listed service reference is to be automatically started when the service represented by the selected tree node is started.

16. (Currently amended) The apparatus of claim 10, wherein the processor and logic executable thereon further comprises:

a processor and logic executable thereon to

receive an input to select one of the listed service references; and

receive an additional input to set the relationship value for the selected

service reference, the ~~relationship value~~ additional input to specify

the binary value that represents the strength of the relationship

between the selected service reference and the service represented

by the selected tree node, the strength of the relationship indicating

whether the selected service reference is to be automatically started

when the service represented by the selected tree node is started.

17-19. (Cancelled)

20. (Currently amended) A system comprising:

a means for displaying a hierarchical tree structure having one or more tree nodes in a graphical user interface, each of the one or more tree nodes representing a resource of an application server instance within a cluster of application server instances, each application server instance within the cluster of application server instances having

a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central database associated with the cluster of application server instances, and

a dispatcher in communication with a central service associated with the cluster of application server instances, the central service enabling synchronization and communication between each of the application server instances

within the cluster of application server instances, the central service having a locking service and a messaging service, the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored with the central database, the messaging service enabling communication among the groups of server nodes within each application server instance within the cluster of application server instances using a message passing protocol,

wherein at least one of the ~~resources the tree nodes represents~~ represent is a service of the application server instance within the cluster of application server instances;

a means for selecting the tree node representing the service of the application server;

a means for displaying a list of one or more service references associated with the service represented by the selected tree node in the graphical user interface; and

a means for displaying a relationship value for each listed service reference, wherein the relationship value is to specify a binary value that represents a strength of a relationship between the listed service reference and the service represented by the selected tree node, the strength of the relationship indicating whether the listed service reference is or is not automatically started when the service represented by the selected tree node is started.

21. (Original) The system of claim 20, wherein the means for displaying the list of one or more service references comprises:

a means for displaying a service reference name, for each listed service reference, wherein the service reference name is to identify the service reference.



22. (Cancelled)

23. (Currently amended) The system of claim 20, wherein

the displayed relationship value is the binary value that indicates represents that the strength of the relationship between the listed service reference and the service represented by the selected tree node is hard if the listed service reference is to be automatically started when the service represented by the selected tree node is started; and

the displayed relationship value is the binary value that indicates represents that the strength of the relationship between the listed service reference and the service represented by the selected tree node is weak if the listed service reference is not automatically started when the service represented by the selected tree node is started.

24. (Currently amended) The system of claim 20, further comprising:

a means for selecting one of the listed service references; and

a means for receiving an additional input setting the relationship value for the selected service reference, the relationship value additional input to specify the binary value that represents the strength of the relationship between the selected service reference and the service represented by the selected tree node, the strength of the relationship indicating whether the selected service reference is to be automatically started when the service represented by the selected tree node is started.

25. (Currently amended) An article of manufacture comprising:

a computer-readable medium providing instructions that, when executed by an apparatus, cause the apparatus to

display a hierarchical tree structure having one or more tree nodes in a graphical user interface, each of the one or more tree nodes representing a resource of an application server instance within a cluster of application server instances, each application server instance within the cluster of application server instances having

a group of server nodes configured with a redundant set of application logic and associated data, each server node within the group of server nodes having access to a central database associated with the cluster of application server instances, and

a dispatcher in communication with a central service associated with the cluster of application server instances, the central service enabling synchronization and communication between each of the application server instances within the cluster of application server instances, the central service having a locking service and a messaging service, the locking service enabling synchronization by disabling access to a portion of configuration data and program code stored with the central database, the messaging service enabling communication among the groups of server nodes within each application server instance within the cluster of application server instances using a message passing protocol,

wherein at least one of the ~~resources the tree nodes represents~~ represent is a service of the application server instance within the cluster of application server instances;

receiving an input to select the tree node representing the service of the application server;

display a list of one or more service references associated with the service represented by the selected tree node in the graphical user interface; and

display a relationship value for each listed service reference, wherein the relationship value is to specify a binary value that represents a strength of a relationship between the listed service reference and the service represented by the selected tree node, the strength of the relationship indicating whether the listed service reference is or is not automatically started when the service represented by the selected tree node is started.

26. (Original) The article of manufacture of claim 25, wherein the instructions that, when executed by the apparatus, cause the apparatus to display the list of one or more service references cause the apparatus to

display a service reference name, for each listed service reference, wherein the service reference name is to identify the service reference.

27. (Cancelled)

28. (Currently amended) The article of manufacture of claim 25, wherein the displayed relationship value is the binary value that represents ~~indicates~~ that the strength of the relationship between the listed service reference and the service represented by the selected tree node is hard if the listed service reference is to be automatically started when the service represented by the selected tree node is started; and

the displayed relationship value is the binary value that represents indicates that the strength of the relationship between the listed service reference and the service represented by the selected tree node is weak if the listed service reference is not automatically started when the service represented by the selected tree node is started.

29. (Previously presented) The article of manufacture of claim 25, wherein the instructions that, when executed by the apparatus, cause the apparatus to display the list of one or more service references further cause the apparatus to

display a service reference type for each listed service reference, wherein the service reference type is to specify a service reference type for the listed service reference.

30. (Cancelled)